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Government
Publications

Our air



Ourselves

Our water

As residents of the Great Lakes basin, we face increasing challenges to protect our environment and ensure it is a healthy place to live, work and play. There are actions we can take and differences we can make.



Environment
Canada



Ontario

Ministry of Environment and Energy



Waterfront
Regeneration
Trust



From the Air Down

SOURCES OF AIR POLLUTION IN ONTARIO

Roughly half the pollutants that contribute to smog in Ontario come from sources in the US, but the rest are home-grown. In Ontario, air pollution comes from a small number of large sources and thousands of smaller ones that include:

- Car and truck exhaust-pipes
- Industrial smokestacks and power plants
- Drycleaners, gas stations, auto body and print shops
- Furnaces used in our homes, schools and offices
- Some of the products we buy, and the landfills that hold our garbage

AS RESIDENTS of the Great Lakes basin, we live near the largest body of fresh water on earth. We share a region that supports a diversity of economic, cultural and recreational activities. It also provides many unique habitats for thousands of different species. This region also has the largest urban population, along with the highest smog levels, in Canada. Air pollution is affecting our health, threatening wildlife and damaging crops. We face increasing challenges to protect this region and ensure it is a healthy place to live, work and play.



Smog

WE SHARE OUR AIR, and we depend on it not only for our health, but for the health of the ecosystems we inhabit. Poor air quality is visible over more and more of our communities on hot, sunny days. It is the brownish haze we call smog. We can see it, smell it, taste it and of course, we breathe it into our lungs.

Smog is a mixture of many different pollutants found in our air. The main ingredients of smog are ground-level ozone and fine particles. Ground-level ozone is formed when sunlight and warm temperatures cause a reaction among chemicals released by cars, trucks, industries and some consumer products. Smog is not just a big city phenomenon. Air currents can carry pollutants for hundreds of kilometres, contributing to smog in other places.

EFFECTS OF AIR POLLUTION

HEALTH

- Irritated throat and eyes
- Coughing and wheezing
- Difficult breathing
- Reduced ability to carry oxygen in the blood
- Fatigue
- Immune system damage
- Aggravated asthma, bronchitis and emphysema
- Increased risk of lung cancer

ECONOMIC

- Increased costs to healthcare system (hospital visits, medication, treatment, etc.)
- Reduced crop yields
- Damage to buildings, paint finishes, fabrics and textiles

ENVIRONMENT

- Damaged trees and other vegetation
- Heavy metals and toxic chemicals are deposited into land and water and accumulate in the food chain
- Reproduction affected among certain species
- Contaminated wildlife habitats
- Climate change and acid damage to our lakes and rivers

WHAT GOES UP MUST COME DOWN

Pollutants that are released into our air often fall back to the ground or into the lakes because of gravity or precipitation. These toxic chemicals cycle through the ecosystem affecting plants, fish, wildlife and eventually humans.

Consider the following...

- The large surface area of the lakes make them vulnerable to deposits of air-borne pollutants through rain, snow and dust fall.
- Over 360 chemicals have been detected in water, sediments, fish, waterfowl and humans living in and around the Great Lakes.
- Certain pollutants concentrate as they work their way up the food chain and are potentially more harmful as they accumulate in those organisms higher in the food chain such as large fish, birds and humans.
- As a result of pollutants that end up in the water, there are restrictions on human consumption of a number of fish species found in the Great Lakes, including rainbow trout, lake trout and white perch.

THE WORST OFFENDERS

Here are some of the contaminants found in our air that are known to have significant effects on our health and environment.

Ground-Level Ozone The primary component of smog. It is formed when sunlight and warm temperatures cause a chemical reaction between oxides of nitrogen and volatile organic compounds. Concentrations of ground-level ozone in the air can make breathing difficult and painful, and may harm people exercising outdoors when levels are high. People with respiratory problems, the elderly, and children are the most susceptible to ozone pollution.

Fine Particles Microscopic particles suspended in the air. These particles are emitted directly into the air by diesel engines, wood burning stoves and fireplaces and through incineration. Inhaling these fine particles can aggravate respiratory illnesses such as asthma, emphysema and chronic bronchitis.

Carbon Monoxide An odourless, colourless gas which is formed from the incomplete combustion of carbon. Exhaust fumes of oil or gasoline powered engines are the major contributors to carbon monoxide in the air, and transportation accounts for 67% of all emissions in the province. Carbon monoxide interferes with the blood's ability to carry oxygen to the brain, heart and other tissues. It may be especially hazardous to people who have heart and circulatory problems as well as those with damaged lungs.

Airborne Toxics Chemicals such as benzene, benzo(A)pyrene, dioxins and furans are emitted into the air by a variety of sources including incineration, cars, coal-burning power plants, barbecues, lawn-pesticides and gas powered lawnmowers. These chemicals can also affect water quality through deposition from the air and are known or suspected to cause cancer in humans and wildlife.

From the ground up

Actions we can Take Differences we can Make

We're All Connected

Over eight million Canadians live and work in the Great Lakes basin. The cars we drive and the energy we consume are significant contributors to the challenge of improving the quality of our air and water. As residents, we are stewards of our future and we can protect this quality of life this region has to offer.

THE LAKE ONTARIO GREENWAY

Opportunities To Green Our Communities

The Lake Ontario Greenway Strategy is an initiative co-ordinated by the Waterfront Regeneration Trust, for areas from Burlington to Trenton with direct ecological, cultural, or economic links to the waterfront. The Greenway links communities and creates opportunities for partnerships, aimed at regenerating and restoring the waterfront.

GREENWAY PARTNERSHIPS FOR CLEANER AIR

- When complete, the Rouge Park on the eastern edges of Metropolitan Toronto will include more than 4800 hectares – a significant "green lung" for the urban areas around it. Created by the Province of Ontario in 1994, with support from the Federal Government, the Rouge Valley includes forest, meadows, marshes and coastal habitats.
- The Waterfront Regeneration Trust is publishing a book in 1997 called *Greening the Toronto Port Lands*. It is a how-to guide that explains how vegetation can improve air quality by filtering dust and cooling ambient air temperatures through shading. Case studies describe how the filtering quality of trees and vegetation in cities like Chicago saved an estimated one million dollars in pollution clean-up costs.



Here are some choices you can make, and actions you can take – on the road, in your home and in your community to minimize impacts of many day to day activities on the quality of our air and water.

GETTING AROUND

Leave your Car If you can walk, bike or take public transit, it's a better way. If you must use your car, combine errands, pick-ups and visits. Limiting the number of trips you take is better for the air.

Car-Pool Car-pooling reduces air pollution, cuts down on traffic congestion, and saves money. Call the Ontario government's Share-A-Ride program (1-800-567-4273) to get information on potential car-pooling partners.

Slow Down Quick acceleration and braking wastes fuel and increases carbon monoxide emissions. As well, fuel efficiency drops one% for every kilometre over the highway's 100 km/hour speed limit.

Stay in Tune A poorly tuned engine guzzles up to 10% more fuel and pumps out more air pollution. It is estimated that 20% of cars contribute nearly 80% of the pollution attributable

to car emissions.

Check your Tires Under-inflated tires increase fuel consumption by about 8% and shorten tire life.

Don't Idle If you expect to stop for more than a minute, turn off the engine. Just 20 seconds consumes more fuel than restarting your engine.

AT HOME

Conserve Energy Make sure your home and water heaters are well insulated to avoid heat loss, choose energy efficient appliances and low-flow shower heads. Remember to turn off lights and minimize use of air conditioners.

Go Green Avoid using pesticides in your garden, some of the chemicals may get into the air. Healthier lawns and gardens are a strong defence against pests. Try organic fertilizers, compost or mulch. Growing your grass a little longer can improve the health of your lawn by maintaining larger root systems without chemicals. Avoid gas-powered machines such as lawnmowers, leaf-blowers and trimmers. Push-mowers or electric models are cleaner alternatives.

Opt for Shade Shade your home with trees and awnings,

and keep windows curtained during the heat of the day to minimize the need for air conditioning. Coal burning power plants are used to meet peak power demand, such as the summer air conditioning season. These generating plants are responsible for 19% of Ontario's nitrogen oxide emissions which contributes to summer smog.

Paint Smart Latex and other low-VOC paints and solvents contribute less to smog.

Buy Washables Dry cleaning clothes uses a cleaning process that releases chemicals into the air and contributes to smog formation. If necessary, use a cleaner who uses a 'wet clean' or 'green clean' process.

IN YOUR COMMUNITY

Plant a Tree Trees and other vegetation in our urban landscapes can play an important role in the health of our communities and cities. They act as filters for the air and can help reduce levels of some air pollutants. You can plant trees in your own backyard or get involved in community or corporate plantings.

Get involved There are many ways to get involved in air quality issues in your community. Check local newsletters or community groups for information about community gardening, adopt-a-park programs, drop-offs for household toxics, such as paints and solvents, habitat regeneration projects, etc.

Keep in Touch Look out for flyers with more air-friendly tips in upcoming Waterfront Trail newsletters. We'd like to hear from you – send us your air-friendly tips, comments or stories so we can share them with our readers.

There are just some examples of what is possible. For more information contact:

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Environment Canada



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